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GENERAL STUDIES (TEST CODE : 1022)

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Medium Eng./Hindi	ENGLISH	Registration Number	5649
Center	ORN, NEW DELHI	Date	16/09/17

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	12.5	
2	12.5	
3	12.5	
4	12.5	
5	12.5	
6	12.5	
7	12.5	
8	12.5	
9	12.5	
10	12.5	
11	12.5	
12	12.5	
13	12.5	
14	12.5	
15	12.5	
16	12.5	
17	12.5	
18	12.5	
19	12.5	
20	12.5	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are TWENTY questions printed in ENGLISH & HINDI
   इसमें बीस प्रश्न हैं अंग्रजी और हिन्दी में छपे हैं।
3. All questions are compulsory.
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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Answer all the questions in NOT MORE THAN 200 WORDS each. Content of the answers is more important than its length. All questions carry equal marks.

12.5X20=250

1. What do you understand by seasonal shifting of pressure belts? What impact does it have on the formation of various climatic regions across the globe? Discuss its socio-economic significance.

वायुदाब पेटियों के मौसमी स्थानांतरण से आप क्या समझते हैं? विश्व भर में विभिन्न जलवायु प्रदेशों के निर्माण पर इसका क्या प्रभाव पड़ता है? इसके सामाजिक-आर्थिक महत्व की चर्चा कीजिए।

There exist along the earth's latitudes, four pressure belts. These are the equitorial low pressure belt, the subtropical high pressure belts, the subpolar low pressure belts, and the polar high pressure belts, in both the hemispheres. These are formed due to the apparent movement of the Sun, between the tropics of cancer and capricorn.

As the Sun moves northward and southward between the two solstices (ie tropics), these

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pressure belts also move north and south respectively.

Impact on climatic Regions:

→ Causation of Monsoon – as sun moves towards the tropic of cancer, the ITCZ shifts northward around 20°N around Indian subcontinent. This creates a pressure differential, which causes monsoon.

→ Mediterranean Sea – causes arid conditions in summer and rain in winter.

→ Although Saharan Africa is mostly dry, shifting of belts causes rain in the North-western part.

→ Middle and northern California experiences Mediterranean-like climate conditions due to shifting of pressure belts.

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Socio-Economic Significance:-

→ Influences Agriculture and cropping patterns in India, which is the backbone of the economy.

→ Leads to cropping of citrus fruits around Mediterranean region, which propels economy and tourism.

→ Climate variability can be accompanied by weather prediction and suitable adaptation and mitigation.

→ Enables cluster formation of population and human settlements around areas of water availability and economic activity.

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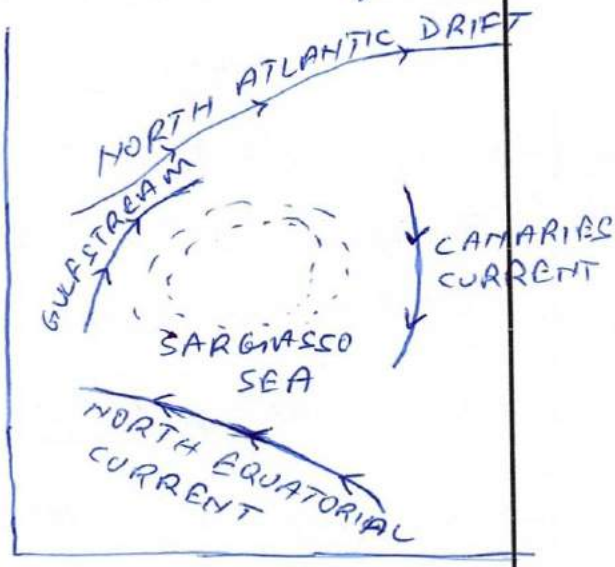
2. Explain the reasons for the formation of Sargasso Sea. Also, examine the factors for it being a region with one of the highest ocean salinity.

सारगैसो सागर के निर्माण के कारणों की व्याख्या कीजिए। साथ ही, उन कारकों का भी परीक्षण कीजिए जिनके कारण यह उच्चतम महासागरीय लवणता के क्षेत्रों में से एक है।

Sargasso sea is a part of the North Atlantic gyre, named so due to the unusually high presence of the seaweed 'Sargassum'.

It is bound by oceanic currents on all sides and doesn't touch land at any point.



Reasons for formation:-

→ The four oceanic currents (as in the figure) form a continuous body of water around leaving this sea in between with nowhere to escape.

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→ The densities of the ocean currents leads to formation of this sea.

→ Coriolis Force turns water rightward in the northern hemisphere, causing a circular motion around this sea.

Reasons for high salinity :-

→ No access to fresh water as the sea is cut off from land.

→ High rate of evaporation in this area leaves behind high salinity.

→ Seaweeds add to the salinity.

→ density differences reflect high salinity in the region.

→ Therefore, since Sargasso sea falls in one of the busiest shipping

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and transport routes, human activities and pollution also lead to high salinity

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3. Why are river deltas important? Discuss the existing threats to river deltas and the measures needed to overcome these threats.

नदी डेल्टा क्यों महत्वपूर्ण होते हैं? नदी डेल्टाओं के समक्ष विद्यमान खतरों एवं इन खतरों से निपटने के लिए आवश्यक उपायों पर चर्चा कीजिए।

River deltas are landforms created in the last stage of a river before it falls into the sea. Their importance lies in the following facts :-

→ Transport → they provide avenues for effective inland transport.

→ Access to water, hence are areas of populous settlements.

→ Help as natural harbours and in port formation for shipping.

→ Provide ecosystem services as they host one of the largest wetlands in the world.

→ Are a source of effective mining

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and quarrying activities as they consist of segregated and fine sand and gravel.

Threats to river deltas :-

→ Sea rise due to global warming is leading to movement of sea water into delta areas.

→ Depletion of wetlands and hence, natural buffer zones due to human activities.

→ Shipping and inland waterways are polluting the deltas.

→ Erosion of soil quality and amount of soil available.

→ Mining and quarrying are leading to overexploitation of natural resources.

→ creation of dams and reservoirs are reducing the flow of water

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and the amount of sand that comes downstream.

→ Riparian rights of downstream states affected.

Measures needed to overcome these threats :-

→ Effectively implement Environment Impact Assessment (EIA), 2016 notification.

→ Strike a balance between development and conservation.

→ Involve CSR funds to develop a culture of sustainable development.

→ Afforestation and Promotion of wetlands.

→ contain anthropogenic activities that cause global warming.

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4. Give an account of the different types of earthquakes based on their zone of occurrence. Identify the earthquake prone regions of the world with special reference to India. Also explain the reasons for the occurrence of earthquakes in geologically inactive regions like Peninsular India.

घटित होने वाले क्षेत्र के आधार पर विभिन्न प्रकार के भूकंपों का विवरण प्रदान कीजिए। भारत के विशेष संदर्भ में विश्व के भूकंप प्रवण क्षेत्रों की पहचान कीजिए। साथ ही, प्रायद्वीपीय भारत जैसे भूवैज्ञानिक रूप से निष्क्रिय/स्थिर क्षेत्रों में भूकंपीय घटनाओं के कारणों की भी व्याख्या कीजिए।

Earthquakes are caused due to the stresses caused by seismic waves in the interior of the Earth-like primary and secondary waves (Rayleigh and core), causing squeezing, stretching or pushing materials to reach the epicentre on the earth's surface.

Earthquakes can be deep, intermediate or shallow, depending on the following types:-

→ Tectonic Earthquakes - due to sliding of rocks.

→ Volcanic Earthquakes - occur in zones of earthquakes due to volcanic eruptions (active)

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→ Collapse earthquakes – when roofs of underground mines collapse
→ Explosion earthquakes – due to nuclear or chemical explosions
→ Reservoir Induced earthquakes.

Earthquake prone regions :-

→ World :-
↳ Found around major (7) and Minor Plate Boundaries due to submergence or divergence.
↳ Plenty around the Pacific "Ring of fire" in countries surrounding the north Pacific Ocean
↳ Rift valleys like East Africa.

→ India :-
↳ There are four Earthquake Prone zones (II to V)
Zone V → Most severe – Jammu & Kashmir, Himachal, Uttarakhand, entire North-East, and Andaman and Nicobar Islands, Gujarat.

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Zone IV → lesser / lower parts in above states, and Delhi.
Zone III → Maharashtra, Odisha, Chattisgarh, West Bengal, Bihar etc.
Zone II → Rest of India.

Occurrence in geologically inactive regions:-
→ Breaking away / Rupture in plates.
→ States like Maharashtra have large dams - hence, reservoir induced earthquakes.
→ Presence of Rift valley system
→ Challenge the theory of exclusivity of earthquakes along plate boundaries.

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5. Explain the reasons for the following: (a) Erosional forms dominate in the west coast while depositional forms dominate in the east coast of India. (b) Western Ghats in Karnataka receive more monsoon rainfall than Maharashtra and Kerala.

निम्नलिखित के कारणों की व्याख्या कीजिए: (a) भारत के पश्चिमी तट में अपरदनजन्य रूपों की अधिकता या बाहुल्य पाया जाता है, जबकि पूर्वी तट पर निक्षेपण रूपों का बाहुल्य पाया जाता है। (b) कर्नाटक में पश्चिमी घाट महाराष्ट्र और केरल की तुलना में अधिक मानसूनी वर्षा प्राप्त करते हैं।

(a) Erosional forms dominate in the west coast while depositional forms dominate in the east coast due to the following reasons:-

→ West coast is a zone of submergence while east coast is a zone of emergence.

→ Coriolis force deflects rightward in the northern hemisphere. Hence, water and wind as erosional agents act towards the coast in the west, and away from the coast in the east.

→ Tides are higher and stronger on the west coast than east coast - hence the impact of water

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as an erosional agent is higher on the west.

→ The west coast is made up of hard rocks and ancient structures that are most susceptible to erosion. The east coast has more of river deltas and beaches.

→ The south-west monsoon directly hits the west coast, providing more erosional action through wind and water than east coast.

(6) Western Ghats in Karnataka receive more monsoon rainfall than Maharashtra and Kerala because:

→ The Ghats are wider in Karnataka and narrower in Maharashtra and Kerala.

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→ The gradient of the slopes is more favourable for rain in Karnataka than Kerala and Maharashtra.

→ The ghats in Karnataka are more continuous than in Kerala and Maharashtra, hence there is little space for the air laden winds to pass through, as opposed to the latter.

→ As they are wider in Karnataka, winds exhaust all the rainfall by the time they reach the leeward side. This does not happen in the case of Kerala and Maharashtra.

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6. With increasing urbanisation in India, the land usage pattern is undergoing major changes. Comment.

भारत में बढ़ते शहरीकरण के साथ ही भू-उपयोग प्रतिरूप में भी महत्वपूर्ण परिवर्तन हो रहे हैं। टिप्पणी कीजिए।

The expansive rural to urban migration is a result of poverty and lack of opportunities in the rural areas, and attractiveness of the urban areas for a better living standard. This rapid urbanisation is inducing the following changes in the land usage patterns :-

urban areas :-

→ Cities are expanding in all directions in an unplanned manner.

→ This has given rise to peri-urban areas where land is diverted to house slums for the expanding population.

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→ To accommodate people and resultant environmental concerns, businesses and industries are moving beyond urban areas where rural land is acquired for them.

→ The shift from residing in houses to housing in flats due to less availability of land and its resultant escalation of prices.

Rural areas:-

→ Agricultural lands are being acquired for residential projects by developers to accommodate growing cities. eg. Greater Noida, Gurgaon stretches.

→ Now government, in order to stop migration due to urbanisation, has started the Rurban Mission and idea of 'smart villages',

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where land is diverted for skill development centres and other such institutions.

→ Semi-urban areas have come up between rural and urban areas, which house industries like food processing, etc.

→ Acquisition of land in interiors for road transport networks and freight corridors are also linked to urbanisation and trade.

Therefore, land usage pattern is changing rapidly. A balance needs to be maintained between development and conservation, and prevent overexploitation of land by adopting sustainable means.

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7. How is the coal bearing strata of India classified in geological terms? Why does coal remain the most important source of energy in India and what are its implications?

भूवैज्ञानिक शब्दावली में भारत के कोयला धारण करने वाले संस्तर को किस प्रकार वर्गीकृत किया जाता है? कोयला भारत में ऊर्जा का सबसे महत्वपूर्ण स्रोत क्यों बना हुआ है एवं इसके निहितार्थ क्या हैं?

Coal is found in abundance in India. Geologically, all forms of coal ie Anthracite, Bituminous, Lignite and Peat are found in Gondwana lands and tertiary coal deposits. Anthracite, the purest form, is mostly only found in Jammu and Kashmir.

The coal found in Gondwana land is mostly centred around Odisha, Jharkhand, chattisgarh, West Bengal, etc. Tertiary deposits are found in North-east, like Assam and Meghalaya.

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Coal is the most important source of energy in India because :-

→ Found in abundance.

→ Technology to reap benefits already in place as 65% of energy needs already met through coal.

→ Alternative sources like renewable energy not fully developed yet.

→ Limited potential and reaping of hydro energy (24%)

→ Manpower and labour already skilled and trained in this regard.

→ Infrastructure for this was invested in and continues to be utilized.

→ Provides economies of scale.

However, such heavy reliance on coal also has the

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following implications:-

→ Negative externalities in terms of environment, as coal is a polluting substance.

→ Coal in India is low grade. Hence, heavy reliance on imports, and substant effect on current Account deficit.

→ Occupational hazards for employees working in coal mines eg. health impact and chronic diseases.

→ overstepping the carbon budget as increased carbon footprint compromises on sustainable development.

→ contributes to greenhouse gas emissions, and hence to global warming and climate change.

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8. Forest fires have become a regular feature during summers in the Western Himalayas. What are the causes behind this phenomenon? Critically examine the efforts made by authorities in countering this problem. Do periodic forest fires have any benefits associated with them?

पश्चिमी हिमालय में ग्रीष्म ऋतु के दौरान दावानल/वनाग्नि (फॉरेस्ट फायर) एक नियमित घटना बन गयी है। इस परिघटना के पीछे क्या कारण हैं? इस समस्या से निबटने के लिए प्राधिकरणों द्वारा किए गए प्रयासों का आलोचनात्मक परीक्षण कीजिए। क्या समय-समय पर होने वाली दानावल की घटनाओं के कुछ लाभ भी हैं?

Forest fires are a form of disaster, whose source lies in both natural and anthropogenic causes. The State of Forest Report 2015 highlights the extent to which these have spread, the maximum being in North-east, Chattisgarh, MP and Maharashtra. Recently, these spread over vast areas in Uttarakhand and Himachal Pradesh. The causes are :-

→ Natural causes :-

↳ Large presence of Pine needles, which easily catch fire and spread both surface and crown fire.

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↳ global warming which is making twigs and wood more susceptible to even small sparks of fire.

→ Anthropogenic causes:-

↳ Slash and Burn Agriculture/ Jhumming cultivation is at times responsible.

↳ Failure to contain disasters, and bureaucratic failures, with heavy reliance on army.

Efforts made by authorities:-

→ Set up National Disaster Response Force (NDRF) as a special unit to fight such disasters. However, NDRF has turned out to be largely toothless, functioning in an isolated manner, and ineffective.

→ State Reporting Systems have

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failed and no early warning system in place.

→ Efforts to involve community participation and reporting have also failed.

→ As a last resort, over reliance on army. Eg. in uttarakhand, army doused fires by air dropping huge amount of water.

Benefits of Forest Fires:-

→ They remove the unwanted and harmful pests from the soil.

→ Periodic fires help (in a controlled manner) enrich nutrients in soil.

→ Ash mixed with soil helps in mulching and adds value.

→ Renews soil's lost characteristics due to previous over exploitation.

→ clears land and provides space.

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9. What are sunrise industries? Elaborate on the potential of these industries in India with a special focus on the food processing industry.

सनराइज उद्योग क्या है? खाद्य प्रसंस्करण उद्योग पर विशेष बल देते हुए भारत में इन उद्योगों की संभावना के संबंध में विस्तार से बताइए।

Sunrise industries are those that are upcoming modern industries, looked upon as future models for propelling economic growth. They leverage on their capability of applying minimum inputs efficiently, and reaping maximum outputs.

The potential of these industries is huge:-

→ Can tap into the 4th Industrial Revolution to use technology for further advancement.

→ With the help of government schemes, can get access to skilled labour.

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→ Easing of FDI has expanded financial sources of investment, which is favourable for the economy as well.

Food Processing Industry

It is a sunrise industry that provides a critical link between agriculture and manufacturing. Its contributions towards of the macro-economy are :-

→ Contributes a large share of GDP.

→ Provides localised employment

→ Increases exports, hence revenue.

→ Increases the supply of nutrition through food fortification.

→ Increases longevity of agricultural produce.

→ Provides infrastructure for business acceleration.

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The government has undertaken various initiatives to promote this industry. These are :-

→ SAMPADA scheme – improved version of the Mega Food Parks scheme – which uses a Hub and Spoke model to integrate Primary, collection and final ~~(collection)~~ processing centres.

→ National Mission for Food Processing, which also now feeds into the SAMPADA scheme.

Hence, the food processing industry, along with other sunrise Industries like Tourism provide a huge impetus to economic growth.

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10. Scientific and technological advancements have removed the constraints posed by geographical factors which determine the location of industries. Comment. Giving examples, discuss the new factors that have come into play as a result.

वैज्ञानिक और प्रौद्योगिकीय प्रगति ने उद्योगों की अवस्थिति को निर्धारित करने वाले भौगोलिक कारकों द्वारा प्रस्तुत की जाने वाली बाधाओं को समाप्त कर दिया है। टिप्पणी कीजिए। इनके परिणाम स्वरूप उभरने वाले नए कारकों पर भी सोदाहरण चर्चा कीजिए।

Location of industries was initially dependent on several geographical factors such as location near raw materials, access to markets, local availability of labour, continued power sources, transport availability, penetration into interiors, travel time (in case of weight losing materials), climate etc.

However, science and technological advancements have reduced these constraints as:-

→ Primary processing has enabled that the life of raw materials

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is not reduced due to travel time.

→ Mobility of labour due to better transport network and advancements such as Metro have helped a great deal.

→ Access to markets has now moved online – eg. Flipkart and Snapdeal have increased the reach of products.

→ Platforms (online) for employment, demand and supply of raw materials have removed accessibility constraints.

→ Apps like the Garu App have provided transparency in provision of electricity. So, differential treatment has been done away.

Therefore, many new factors

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have come into play. These are :-

→ Access to internet - both hardware and software.

→ Mobile connectivity - to reap the benefits of science and technology.

→ Online Banking - to reduce reliance on brick and mortar banks, for both - industry and labour.

→ Social Media Reach - to attract young talent, build credibility and goodwill, etc.

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11. Give a brief distribution of major grasslands of the world. Discuss the reasons behind the temperate grasslands becoming the grain baskets of the world. Also compare their performance vis-a-vis tropical grasslands in this regard.

विश्व के प्रमुख घासस्थलों के वितरण का एक संक्षिप्त विवरण प्रस्तुत कीजिए। शीतोष्ण घासस्थलों के विश्व की खाद्यान्न टोकरी बनने के निहित कारणों की चर्चा कीजिए। इस संबंध में उष्णकटिबंधीय घासस्थलों की तुलना में उनके प्रदर्शन की चर्चा भी कीजिए।

Grasslands are vast expanses of natural vegetation, spread over a huge area, which play a significant role in the economy and biodiversity. The two types of grasslands and their differing features are :-

Tropical grasslands	Temperate grasslands.
→ Names → Savanna (Africa); Campos & Llanos (South America)	→ Steppes (Central Asia) Prairies (N. America) Pampas (S. America) Downs (Australia) Veldts (S. Africa) Pustaz (Hungary)
→ Between 0° to 20° on both sides of the equator	→ Between 30°-45° North and south.
→ Tall grasses interspersed with trees & shrubs	→ short grasses over vast land area (plain)

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Temperate grasslands are called the 'granaries' of the world due to:-

→ Favourable climate - less daily and annual range of temperature. The slight cold favours effective germination of seeds.

→ Vast tracts of land favour large scale mechanisation and economies of scale.

→ Topography is mostly flat and soil is rich with availability of water.

→ Also favours animal rearing and mixed farming to provide complimentarity.

→ Rich soil and nitrogen fixation have increased yield per hectare.

On the other hand, tropical grasslands are smaller

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in size, are rocky with trees and shrubs, and climate near the equator is not very favourable for large scale agricultural activities. Hence, temperate grasslands have performed much better than tropical grasslands.

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12. Weather and climate information plays a significant role in increasing agricultural productivity as well as minimising crop losses. Comment. Also examine the ways in which forecasting system can be made more effective and inclusive.

मौसम और जलवायु संबंधी सूचना कृषि उत्पादकता को बढ़ाने एवं साथ ही साथ फसल के नुकसान को कम करने में महत्वपूर्ण भूमिका निभाती है। टिप्पणी कीजिए। इसके साथ ही उन उपायों का परीक्षण कीजिए जिससे पूर्वानुमान प्रणाली को और अधिक प्रभावी एवं समावेशी बनाया जा सकता है।

Weather and climate have a wide scale impact on our lives. One such area is in increasing agricultural productivity and minimising crop losses, as:-

→ The Monsoon provides a huge source of rainfall to Indian lands, a primary source of irrigation.

→ The Western disturbances are integral to the wheat (Rabi) crop in the winter months in North India.

→ Favourable climate and

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resultant soils provide an impetus to high growth of tea in Darjeeling-Sikkim regions.

→ Weather and climate are passive soil forming factors. Different weather areas have different soils, favourable for different kinds of crops.
eg. Alluvial for rice and wheat, Black/Regur for cotton, Laterite for cashews, etc.

→ Patterns are known beforehand. Hence, agricultural activity can be planned accordingly.

The Indian Meteorological Department (IMD) provides for

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weather forecasting. It can be made more effective in the following ways :-

→ Shifting from current statistical model to an advanced proposed model of real time analysis

→ Supplement with SMS alerts, and information generation systems.

→ Collaborate with international agencies to improve accuracy.

→ Invest in R&D to upgrade systems.

→ Leverage on ISRO's prowess and utilize platforms like Bhuvan, etc.

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13. The Paris Climate agreement sets ambitious goals but does not go far enough in mechanisms to achieve the aims. Comment. Also highlight the challenges which a developing country like India faces to achieve the targets it has set for itself.

पेरिस जलवायु समझौता महत्वाकांक्षी लक्ष्यों को तो निर्धारित करता है किन्तु इन लक्ष्यों को प्राप्त करने के लिए पर्याप्त प्रावधानों की व्यवस्था नहीं करता है। टिप्पणी कीजिए। साथ ही, भारत जैसे विकासशील देश द्वारा अपने लिए निर्धारित किए गए लक्ष्यों को प्राप्त करने में सामना की जाने वाली चुनौतियों पर भी प्रकाश डालिए।

The Paris climate Agreement [COP-21] of the UNFCCC seeks to reduce greenhouse gas emissions and the resultant rise in temperature to less than 2°C (even try for 1.5°C) below pre-industrial levels. It requires countries to submit their Intended Nationally determined contributions (INDC's) and a review every 5 years.

While these targets are ambitious, the mechanisms to achieve these goals are lacking, as :-

→ The green climate fund (GCF),

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to which $100 billion a year was pledged by developed countries has not seen much progress. Even now, there is no accountability mechanism.

→ Only the 2°C limit is binding, whereas NDC's are voluntary. Hence, no repurcussions for failure to comply.

→ The principle of CBDR-RC does not find any valuable implementation.

→ Transfer of funds and technology to developing countries have not been provided for (mechanism).

→ No roadmap for carbon trading.

India has set the following targets (INDC) :-

→ Emissions reduction by 33-35% by 2030, of 2005 levels.

→ 40% of energy to be from non-fossil fuel-based sources.

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→ To create 2.5 - 3 Billion CO_2 unit worth equivalent carbon sinks.

Challenges before India's targets :-

→ Technology transfer a must, from developed countries.

→ While good progress is made in Solar energy, high costs and lack of skilling of personnel are drawbacks.

→ Reliance on GCF for additional funds.

→ Seamless grid connectivity for alternative sources of energy, into the main grid.

→ Rooftop solar has been very slowly embraced with only 1 GW out of target of 40 GW met as of now.

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14. Describe the factors responsible for increase in marine pollution in the past few decades. What impact does marine pollution have on the ocean ecosystem? Discuss the measures taken by the international community to deal with it.

पिछले कुछ दशकों में समुद्री प्रदूषण में हुई वृद्धि के लिए जिम्मेदार कारकों का वर्णन कीजिए। महासागरीय पारिस्थितिकी तंत्र पर समुद्री प्रदूषण का क्या प्रभाव पड़ता है? इससे निपटने के लिए अंतरराष्ट्रीय समुदाय द्वारा किए गए उपायों की चर्चा कीजिए।

Marine pollution is an environmental hazard that has far reaching consequences on the lives of humans and animals alike. The causes / factors are :-

→ widescale shipping activity - causes noise and physical pollution in seas/oceans.

→ Oil spills due to accidents/human negligence.

→ Ineffective waste management.

→ Discharge of industrial effluents into the war

→ Discharge of plastic wastes and microbeads, that enters

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the aquatic ecosystem.

Impact on the ocean system:-

→ Coral bleaching
→ deafening of marine animals due to noises of ships, etc.
→ Extinction of species.
→ causes behavioural changes in marine animals.
→ Plastics enter the food chain and have health consequences for us and animals.

Measures taken by International Community:-

→ UN convention on law of the sea (UNCLOS) - chapter XIII, Articles 194-196 deal with punishment for marine pollution.
→ IMO's convention on Marine

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Pollution, 1960

→ MARPOL convention, 1973 deals with consensus on consequences of violations.

→ Convention on Ballast water management.

→ Polluter Pays Principle is now a part of customary International law.

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15. Discuss the environmental impact of electronic waste and the best practices for its handling in the context of the E-waste (Management) Rules, 2016. Also suggest some ways to incentivise consumers to utilise and dispose-off the e-waste properly.

इलेक्ट्रॉनिक अपशिष्ट के पर्यावरणीय प्रभावों एवं ई-अपशिष्ट (प्रबंधन) नियम, 2016 के संदर्भ में इसके निष्पादन के लिए सर्वोत्तम तरीकों पर चर्चा कीजिए। ई-अपशिष्ट के उचित उपयोग और निपटान के लिए उपभोक्ताओं को प्रोत्साहन प्रदान करने हेतु कुछ उपाय भी सुझाइए।

The advancements in science and technology have multiplied the problem of E-waste, which constitutes discarded, obsolete and now worthless electronic equipment. These have many harmful metals like lead, Cadmium, Nickel, Mica, etc which need to be effectively discarded to prevent adverse effects to humans.

The government has introduced the E-waste (Management) Rules, 2016, which have attempted to incorporate the following

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Best practices:-

→ Extended Producer's Responsibility (EPR) - whereby Producers have been made equally responsible as consumers, towards handling e-waste.

→ Consumer awareness to not hoard electric equipments that are of no use.

→ Advance contracts with consumers - to get refunded money upon return of used products after 2-3 years.

→ Exchange contracts - providing a value to old equipment while purchasing a new one.

→ Focus on Reduce, Reuse and Recycle (3R's).

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Ways to incentivise consumers for effective disposal :-

→ Run consumer awareness programs like "Jago Grahak Jago".

→ Get celebrity figures to speak on and promote the need for effective disposal.

→ Incentivise further by giving a good price in exchange contracts.

→ Introduce chapters on waste disposal in school curriculum.

→ Make E-waste disposal a movement and integrate with Swachh Bharat Mission.

→ Introduce ranking of states on waste disposal performance, with E-waste being a criteria.

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16. An emissions-reduction approach to fighting global warming is not enough. Alternative solutions involving climate engineering might have to be deployed sooner than we think. Defining climate engineering, critically examine the statement.

ग्लोबल वार्मिंग से निपटने के लिए केवल उत्सर्जन-न्यूनीकरण उपागम (दृष्टिकोण) पर्याप्त नहीं है। संभवत: हमें अनुमानित समय से पूर्व ही,क्लाइमेट इंजीनियरिंग को सम्मिलित करने वाले वैकल्पिक समाधान को अपनाने की आवश्यकता पड़ सकती है। क्लाइमेट इंजीनियरिंग को परिभाषित करते हुए, इस कथन का आलोचनात्मक परीक्षण कीजिए।

The Paris Agreement and its preceding Kyoto Protocol have lithertо only focussed on emissions reductions as the primary objective of fighting global warming. However, these being long term and not always effective, need to be supplemented by alternative solutions like climate engineering. These are :-

→ Carbon capture and storage (CCS) → it involves capturing carbon through technology and storing it underground.

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eg. the CARBFIX project as an effective tool of carbon sequestration.

→ Artificial Injection of Aerosols in stratosphere – these will reflect some sun rays before entering earth's atmosphere and can cool down atmosphere by 1°c.

→ Placing reflecting mirrors in stratosphere, These will also have this desired effect.

→ Cloud seeding by injecting Silver Iodide in the atmosphere, which will cause rain and have a cooling effect on the atmosphere.

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Therefore, climate engineering involves using science to alter the natural process of climate to have desired effect of lower global warming. HOWEVER, the potential of these is limited, as :-

→ None of the above experiments are successful.

→ Cloud seeding has repeatedly failed.

→ Ethical issues with interfering with nature.

→ Huge costs involved.

→ Stratosphere has not yet been fully understood to carry out such interventions.

→ Artificial cooling may have negative externalities.

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17. Discuss how drought is more of a man-made disaster than a mere deficiency of rainfall. Elaborate on the consequences of desertification that drought prone regions face. Also, bring out the preventive steps to be taken in light of targets to curb desertification as mentioned under the SDGs.

चर्चा कीजिए कि किस प्रकार सूखा केवल वर्षा की कमी से पैदा आपदा न हो कर मुख्य रूप से एक मानव-निर्मित आपदा है। सूखा प्रवण क्षेत्रों द्वारा सामना किए जाने वाले मरुस्थलीकरण के परिणामों को विस्तार से बताइए। साथ ही, मरुस्थलीकरण पर अंकुश लगाने के लिए SDGs के अंतर्गत उल्लिखित लक्ष्यों के प्रकाश में उठाए जाने वाले निवारक कदमों को स्पष्ट कीजिए।

Droughts have their origin in deficiency of rainfall. HOWEVER, their effects are accentuated due to human mismanagement. Examples are :-

→ Sowing of water guzzling crops like sugarcane in drought prone areas like Maharashtra.

→ Lack of planning in advance when drought prone ness is already known.

→ unequal utilization of river waters.

→ Delayed clearances/implementation

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of river linking projects.
→ deforestation
Such areas face desertification due to low water availability and degraded soil quality.
Its consequences are :-
→ unfit for any cultivation except desert scrubs.
→ Worsens conditions of farmers, leading to farmer suicides.
→ Leads to anti-social elements like Naxalism or dacoits of chambal ravines.
→ Affects access to food and minimum life requirements of people in those areas - malnourishment etc.
→ Furthers Poverty.

The Preventive steps that can be taken in light of SDG's are :-

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→ Put early warning systems in place.

→ River-linking projects.

→ Rationalise cropping patterns.

→ Equalize MSP for most crops to encourage equal and merit-based sowing.

→ Controlled and limited farm loan waivers in case of declared droughts.

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18. India's first National Disaster Management Plan may fulfill the legal requirement of having a plan but it may not be very effective in achieving its objective of building resilience. Critically analyse.

भारत की प्रथम राष्ट्रीय आपदा प्रबंधन योजना, भले ही एक योजना होने की विधिक आवश्यकता को पूर्ण कर सकती है किन्तु यह प्रत्यास्थता निर्माण करने के अपने उद्देश्य को प्राप्त करने में अधिक प्रभावी नहीं हो सकती। आलोचनात्मक विश्लेषण कीजिए।

The National disaster management Plan, 2016 (NDMP) was its India's 1st concerted Plan in that regard. It focusses on the Sendai principles. HOWEVER, it may not be very effective due to :-

→ the fact that it does not set any targets and goals like the Sendai framework

→ It relies on NDRF, which is largely ineffective, working in silos, without coordination with other agencies.

→ Does not lay down the mechanism of reducing risk,

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improving risk governance, etc.

→ Does not address gender-based concerns like 2nd ARC did.

→ Source of funds not clear.

→ Community participation not effectively enhanced.

Hence, the NDMP, while a welcome step, needs to incorporate an integrated approach of all sectors and stakeholders.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

19. A better prepared community is key to effective disaster risk reduction. Citing specific examples, examine the importance of the role of local government and community in dealing with disasters.

प्रभावी आपदा जोखिम न्यूनीकरण के लिए एक बेहतर रूप से तैयार समुदाय महत्वपूर्ण है। विशिष्ट उदाहरण देते हुए आपदाओं से निपटने में स्थानीय सरकार एवं समुदाय की भूमिका के महत्व का परीक्षण कीजिए।

Community participation is the key to addressing disaster situations on the ground.

In doing so, local government bodies like Panchayats and municipal corporations play an integral role, as :-

→ They are closest in terms of governance on the ground.

→ They have decision making powers in times of disasters

Eg. in case of Uttarakhand floods, the DC's and ADC's were most effective in evacuation, relief and Rehabilitation.

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→ The DC of one district in odisha during Phailin, the cyclone, was credited for early evacuation and no loss of life.

The community :-

→ Provides moral and emotional support among each other.

→ Work in union against a natural or man made external force.

→ The strong can help out the not so strong in evacuation operations.

→ Help in providing food and relief materials and their distribution.

→ unity in redevelopment / rebuilding post disaster.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

20. What is the role of NDRF in managing disasters in the country? Highlighting the challenges that NDRF has been facing, discuss why it is still the armed forces which end up being the most visible force at hand during disasters.

देश में आपदाओं के प्रबंधन में NDRF की क्या भूमिका है? NDRF द्वारा सामना की जाती रही चुनौतियों पर प्रकाश डालते हुए चर्चा कीजिए कि आपदाओं के दौरान केवल सशस्त्र बल ही क्यों अभी भी सहज और सर्वाधिक उपलब्ध बल के रूप में दृष्टिगोचर होते हैं।

National Disaster Response Force (NDRF) was set up under the NDMA Act, 2005 as the primary force, with 12 battalions, to fight disasters. However, experiences point towards its ineffectiveness.

challenges :-

→ centralised and isolated force.

→ Not integrated with other forces.

→ Effective Training can be only when disasters take place.

→ Normal time training is inadequate.

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→ It is a very new force. Hence, capacity addition still taking place.

→ Sources of funds are largely inadequate.

→ Joint Trainings with other countries don't include NDRF.

→ Number of personnel very low compared to requirement of the country.

Due to the above reasons, we still rely more on the armed forces as a measure of last resort. NDRF should at least be made to work with the former to gain more expertise and experience for future.

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GENERAL STUDIES (TEST CODE : 1025)

Name of Candidate	VIKRAMADITYA MALIK		
Medium Eng./Hindi	ENGLISH	Registration Number	5649
Center	ORIX, NEW DELHI	Date	08/10/17

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	12.5	
2	12.5	
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16	12.5	
17	12.5	
18	12.5	
19	12.5	
20	12.5	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are TWENTY questions printed in ENGLISH & HINDI
   इसमें बीस प्रश्न हैं अंग्रजी और हिन्दी में छपे हैं।
3. All questions are compulsory.
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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Answer all the questions in NOT MORE THAN 200 WORDS each. Content of the answers is more important than its length. All questions carry equal marks.

12.5X20=250

1. The dual use nature of space technology enables its utilisation for civilian as well as military purposes. In this context, examine the need for a Space Security Policy in India.

अंतरिक्ष प्रौद्योगिकी के दोहरे उपयोग की प्रकृति नागरिक एवं साथ ही सैन्य प्रयोजनों के लिए इसके उपयोग को सक्षम बनाती है। इस संदर्भ में, भारत में अंतरिक्ष सुरक्षा नीति की आवश्यकता का परीक्षण कीजिए।

Space technology has had far reaching benefits for mankind such as earth observation, weather prediction, increased collaboration on remote sensing, positioning services and the entertainment industry.

HOWEVER, it also poses a grave risk in terms of the arms race reaching space as the 4th stage of warfare after land, sea and air. After launch of SPUTNIK, the outer

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Space Treaty, 1967 was signed on a global scale, which promoted peaceful uses of space. Space is also governed by the UNCLOS (Sea Convention) as a global common for the benefit of mankind.

China, though advocating for a PAROS treaty, is also pursuing making of Anti-satellite missiles (ASAT's). India, hence, is also producing its own version of ASAT's for deterrence in the neighbourhood.

This gives rise to a need for a Space Security Policy to secure India's interests in terms of its satellites which provide various essential services.

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Further, India needs to have a standardised document with enlisting of action plans in case of breach of space by other countries. Such a standard operating procedure will provide deterrence, certainty and predictability to India's security doctrine.

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2. What are the issues associated with coastal security in India? In this context, discuss whether a Central Marine Police Force can help in addressing these issues.

भारत में तटीय सुरक्षा से संबद्ध मुद्दे क्या हैं? इस संदर्भ में, चर्चा कीजिए कि क्या एक केंद्रीय समुद्री पुलिस बल (सेंट्रल मरीन पुलिस फ़ोर्स) इन समस्याओं को हल करने में सहायता कर सकता है?

India has a long coastline of 7500 kms, which is an avenue for large amount of trading activities, life of coastal communities, and provides for transport and connectivity with the rest of the world. The issues associated with coastal security are:-

→ Source of terrorist infiltrations eg. Mumbai 26/11 attackers came by sea.

→ Threat of Piracy - India had recently revised longitudinal extent of its "High Risk Area"

→ Surveillance by submarines of other countries - permissibility governed by Indian Maritime

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Zones Act, 1976.

→ Illegal migration into the country. eg. Bangladeshi migrants and Rohingyas.

→ Avenue for human trafficking

→ Incursions by Sri Lanka fishermen and tapping Indian catch.

The proposed CMPF is a welcome step and it will help in addressing issues, as :-

→ dedicated and specialised force on lines of CRPF etc.

→ All India cadre, with uniform service conditions.

→ specialised training and operational efficiency

→ Will augment the role of Indian Coast Guard, which has not been very effective.

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→ Will secure Indian sovereignty within territorial waters i.e within 12 nautical miles.

CMPF is a welcome step and will go a long way in securing coastal areas of India

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3. Cyber terrorism holds serious potential to paralyze economic and financial institutions in India. What are the issues and challenges w.r.t. India's cyber security? What initiatives has the GoI taken to address the same?

साइबर आतंकवाद भारत में आर्थिक एवं वित्तीय संस्थाओं को शक्तिहीन करने संबंधी गंभीर क्षमता रखता है। भारत की साइबर सुरक्षा से संबद्ध मुद्दे और चुनौतियाँ क्या हैं? इनका समाधान करने के लिए भारत सरकार ने कौन-सी पहलें की हैं?

cyber terrorism and warfare is another front of conflict that has opened with the proliferation of technology. Data is the new oil and cyber terrorism holds data and information systems to ransom by techniques such as hacking, ransomware (wannacry, petya), etc. This threatens economic & financial systems in India. eg. recent ATM attacks.

Issues and challenges

→ governmental warfare can be carried out eg. stuxnet attack on Iran's nuclear arsenal.

→ over the internet, so very difficult to establish jurisdiction.

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→ Anonymity makes it difficult to track, identify and punish the wrongdoer.
→ Avenue for radicalisation and recruitment by terror organisations like ISIS.
→ Spread of hate & crime on social media threatens social fabric of society.
→ Recent hacking of all airline computers over the world led to time & cost wastage.

Initiatives taken by GOI :-
→ National Critical Information Infrastructure Program (NCIIP) to secure critical information.
→ Setting up of CERT-IN (computer emergency response team)
→ Encourage reporting by private sector, as mandated in the

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Information Technology Act, 2000.

→ RBI has set up R-SITE to secure financial transactions.

→ Maharashtra is the 1st state to have cyber Police stations in all districts.

Therefore, many measures need to be taken further like securing Aadhar data, quantum Cryptography, etc.

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4. Critically examine the feasibility of fencing the Indo-Myanmar border as a strategy to contain insurgency given the existing Free Movement Regime (FMR) between the two countries.

उग्रवाद को नियंत्रित करने की रणनीति के रूप में भारत-म्यांमार सीमा पर बाड़ लगाने संबंधी व्यवहार्यता का, दोनों देशों के बीच मौजूदा मुक्त आवागमन व्यवस्था (Free Movement Regime) के परिप्रेक्ष्य में आलोचनात्मक परीक्षण कीजिए।

The border Agreement of 1967 governed free movement regime between India and Myanmar. However, Myanmar has recently begun fencing the border. This gains relevance in light of following issues :-

→ Myanmar has camps of many insurgent groups like NSCN-K.

→ India conducted surgical strikes on such camps in 2015, which probably caused resentment with Myanmar.

→ Myanmar recently signed a ceasefire agreement with NSCN-K.

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Feasibility and implications:-

→ Resentment among people as free movement gave an impetus to trade and cultural links.

→ Will affect commerce within the area.

→ Against spirit of setting up of Border Haats

→ Protests, specially at places like Moreh.

→ difficult terrain will increase costs, give birth to illegal activities once fencing done.

Border fencing will divide people who share cultural & historical links. A FMR with integrated border posts is a potential viable alternate solution.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

5. What do you understand by 'lone wolf attacks'? In the wake of increasing lone wolf attacks across the globe, assess India's vulnerability to such attacks. Also, suggest measures that can prevent such attacks.

'लोन वुल्फ हमलों' से आप क्या समझते हैं? विश्व भर में बढ़ते लोन वुल्फ हमलों को देखते हुए इस प्रकार के हमलों के प्रति भारत की सुभेद्यता का आकलन कीजिए। साथ ही, इस प्रकार के हमलों के रोकथाम हेतु उपाय सुझाइए।

Lone-wolf attacks are isolated, non-aligned attacks by self-radicalised individuals due to various reasons like spreading of hate online, following ideologies of groups like ISIS in a remote manner etc. Recent attacks in Florida and Las Vegas show the intensity and potential threat that these pose.

Apart from loss of human life, they spread fear in society, along with distrust and lack of faith in humanity. They are fueled by easy gun procurement

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rules in countries like USA.

Recently, ISIS called for such lone wolf attacks in India. Disappearance of 21 youth in Kerala and arrest of 21 in Gujarat show growing risk of radicalisation in India. These, along with sleeper cells, need to be addressed and eliminated.

Steps taken by GOI:-

→ Radicalisation Helpline, which has been landed as a welcome move.

→ Academic Instruction in madarsas.

→ Following secularism in true spirit.

→ Operation 'chakravyuh' like operations by the IB.

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Sensitization, education and partnership in economic development are the key to dealing with such attacks from the root upwards.

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6. What are the factors that lead to generation of black money in India? Discuss the role played by India both domestically and internationally to neutralise the menace of money laundering and black money.

भारत में काले धन के सृजन की परिस्थितियों को उत्पन्न करने वाले कारक क्या हैं? घरेलू और अंतरराष्ट्रीय दोनों स्तरों पर मनी लॉन्ड्रिंग तथा काले धन के खतरे को निष्प्रभावी करने में भारत की भूमिका की चर्चा कीजिए।

Black money is the money that exists outside the formal banking channels in what is termed as the 'grey economy' in India. The factors that enable its generation are:-

→ corruption - both coercive and collusive.

→ Real Estate transactions - where registration of property is not done at full value.

→ Terrorism financing - that is a threat to security of India.

→ Drugs trade - that is illegal otherwise.

→ Benami transactions.

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→ Money laundering through Hawala transactions.

Role by India :-

→ Domestically :-

(i) Demonetisation - to bring back majority of cash into the system.

(ii) Surgical strikes to stop terrorism.

(iii) Security features on currency.

(iv) Regulation of P-Notes.

(v) Attempts to regulate the gold market.

(vi) Real Estate reforms & revision of circle rates.

→ Internationally :-

(i) BEPS agreement - OECD.

(ii) Around DTAA's.

(iii) Information sharing

(iv) Advocate adoption of CCIT.

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to plug terror financing.

(v) support security council Resolution 2322 on judicial cooperation in terror financing.

The above steps, along with concerted political will will go a long way in curbing the menace of black money.

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7. The national security of the country cannot be strengthened until we focus on intelligence sharing and ensure greater coordination among agencies. Elaborate. Also, highlight the steps being taken by the government to strengthen its intelligence network.

जब तक हम विभिन्न एजेंसियों के मध्य आसूचना साझाकरण (इंटेलिजेंस शेयरिंग) एवं बेहतर समन्वय पर ध्यान केंद्रित नहीं करेंगे, देश की राष्ट्रीय सुरक्षा को सुदृढ़ नहीं किया जा सकता। विस्तारपूर्वक बताइए। साथ ही, सरकार द्वारा अपने आसूचना नेटवर्क को मजबूत बनाने के लिए उठाए गए कदमों पर भी प्रकाश डालिए।

Intelligence sharing and inter-agency coordination is the key to strengthening national security in India on a war footing. The benefits of the same are:-

→ Avoid duplication of efforts by investigation agencies.

→ Integrated and concerted fighting against threats posed.

→ Effective tracking and monitoring of crime and criminals.

→ sharing of information and evidence on a centralised

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database.

→ All India coordination, negating distance, language barriers.

→ cooperative federalism

→ concordance among agencies.

→ operational efficiencies.

→ Time and cost savings.

Steps taken by GOI :-

→ NATGRID – to link 21 investigative agencies like RAW, IB, CBI, DRI, ED etc. for intelligence sharing and fighting security threats in a comprehensive manner.

→ CCTNS – crime & criminal tracking network – between police stations across India to share evidence, send alerts etc.

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→ POLNET – online network using very small aperture radars (VSAT) to track criminals and share information.

The above steps go a long way in information sharing and promise an effective solution to national security issues in India.

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8. In what ways is the approach of "Act East" Policy different from "Look East" Policy? Suggest certain priority areas on which India should focus upon to fulfill its ambitious geostrategic and economic goals in the region.

"लुक-ईस्ट" नीति की तुलना में "एक्ट ईस्ट" नीति का दृष्टिकोण किस प्रकार भिन्न है? इस क्षेत्र में अपने महत्वाकांक्षी भू-रणनीतिक और आर्थिक लक्ष्यों को पूरा करने के लिए कुछ ऐसे प्राथमिकता क्षेत्रकों का सुझाव दीजिए जिन पर भारत को अपना ध्यान केन्द्रित करना चाहिए।

The look-east policy was introduced post the 1991 reforms, which envisioned enhanced diplomacy and engagement with South and South-east Asia at multiple levels of economy, geostrategy and leadership.

The 'Act-east' policy, as introduced in 2014 at the ASEAN and East Asia Summit involves concerted action in engaging with South-east and South Asian states in terms of sustainable development, security provision, economic acceleration and projecting India as a soft power and a "net security provider" in Asia-Pacific region.

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Priority areas and concerted action:-

(1) Economic thrust

→ India-ASEAN Free trade Agreement will give a boost to Indian exports and the service sector, apart from investments.

→ Regional comprehensive Economic Programme (RCEP) will reduce barriers to trade.

(2) Transport and connectivity

→ Kaladan multi modal network with Myanmar, connecting Mizoram.

→ Indo-Myanmar-Thailand Trilateral Highway - will improve movement of goods and people.

→ BCIM motor vehicles Agreement.

(3) Development of North-East India

→ Penetration and collateral focus on hitherto ignored north-east states.

(4) combating Insurgency - many

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insurgent camps in Myanmar and Bangladesh can be dealt with, with cooperation.

(5) cooperation in multilateral organisations like ASEAN, EAS, BIMSTEC, IORA, etc for garnering support to India's ambition for UNSC and NSG seats.

(6) giving impetus to Indo-Japanese initiative - African Asian growth corridor, as a counter to China's OBOR, and reducing China's influence in the region.

The Act East Policy is a welcome step of concerted action and would require a multipronged, committed approach to present India as a strong force in the community of nations.

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9. In recent years there has been an increasing convergence between Russia and China on several global issues. What are its implications for India? What steps should be taken by India to protect its national interests?

हाल के वर्षों में रूस और चीन के बीच कई वैश्विक मुद्दों पर समाभिरूपता (कन्वर्जेंस) में निरंतर बढ़ोत्तरी देखी गयी है। भारत के लिए इसके क्या निहितार्थ हैं? भारत द्वारा अपने राष्ट्रीय हितों की रक्षा करने के लिए कौन-से कदम उठाए जाने चाहिए?

Russia and China share a common interest in driving the world away from a US-dominated unipolar system, to a multipolar system. The historical vicissitudes in their relationship have given way to an economic and deep strategic partnership, which is evident through the following spheres:-

→ China buying Russian oil and resources post US-backed sanctions post its annexation of Crimea.

→ Strategic and political partnership in organisations like SCO, Heart of Asia conference etc.

→ Similar stand on Syria and backing the Assad regime.

→ Similar stand on engaging with the Taliban in Afghanistan.

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→ Russia promoting China's OBOR project.

Implications for India:-

→ Emergence of a Russia-China-Pakistan Axis is a threat to India's security in the subcontinent.

→ Reshaping of Russian priorities risks losing an old trusted friend. This is depend by India's closeness to USA.

→ China has backed Pakistan on its stand on Terrorism and Masood Azhar. Russia joining this will be a setback.

→ May threaten India's move towards a seat at UNSC, NSG if Russia supports the Chinese stand.

→ May see diversion of Russian arms purchases and imports towards Pakistan.

→ May strengthen opposition to India's stand on border disputes like Aksai Chin and Gilgit-Baltistan.

→ Threatens workability of SCO.

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Steps India should take:-

→ confidence Building measures with both Russia and China.

→ Strengthen its fight against terrorism and seek more support for adoption of CCIT (convention).

→ Assure Russia that its engagement with USA is in no way, a threat to our old friendship.

→ comprehensive talks with China to prevent Doklam-like situations by jointly working on it.

→ Soft skills in display through culture, arts, films, Yoga etc.

Russia is a trusted ally and China, a growing superpower. India should engage with both at all levels to further its geopolitical standing and path of economic development.

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10. After remaining peripheral to India's foreign policy priorities, the Indian Ocean has recieved some attention in recent years. Nonetheless, given the significance it holds, involvement of actors with diverse interests and existing challenges, it is imperative that India redoubles its efforts in shaping the future of the region. Discuss.

दीर्घकाल तक भारत की विदेश नीति की प्राथमिकताओं में हाशिये पर रहने के उपरांत, हिंद महासागर ने हाल के वर्षों में कुछ ध्यान आकर्षित किया है। इसके अंतर्निहित महत्व, विभिन्न हितों वाले देशों के शामिल होने और मौजूदा चुनौतियों को दृष्टिगत रखते हुए, यह आवश्यक है कि भारत इस क्षेत्र के भविष्य को आकार प्रदान करने में अपने प्रयासों को और अधिक बढ़ाए। चर्चा कीजिए।

Around 90% of India's trade by volume and 90% of its oil imports pass through the Indian Ocean. The region also has the major choke points in terms of trade in the form of the straits of Malacca, Hormuz, Bab-el-Mandab, etc. Hence the need for security and leadership.

Significance of IOR :-

→ Securing trade routes.
→ Strengthening India's role in geopolitics as a net security provider.
→ Combating Piracy.
→ Studying & understanding disasters.
→ Environmental concerns and

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supporting Island States' fight against climate change and sea level rise.

→ upholding freedom of navigation under UNCLOS.

→ Equitable and just exploitation of natural resources and rare earth minerals.

Competing interests and challenges:-

→ China's 'String of Pearls' and India's partnership with USA in its "Asia Pivot" to counter it.

→ China's OBOR which includes its Maritime Silk Road and Indo-Japanese counter in terms of Africa-Asia growth corridor.

India's initiatives:-

→ Project Mausam - to revive cultural links and display soft diplomacy.

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→ Impetus to Indian Ocean Rim Association (IORA) and BIMSTEC to further its economic and strategic interests.

→ INCOIS and weather forcasting, navigation through South-Asia satellite.

→ Acting as a security provider to Islands like Maldives, recent stand on Diego Garcia, etc.

The Indian Ocean region has gained paramount importance specially with rising chinese influence. India must step up its efforts and engagement with various players to achieve a position of dominance

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11. What are the objectives and key achievements of the United Nations Commission on International Trade Law (UNCITRAL)? Also, highlighting India's association with the Commission, identify its influence on various domestic legal regimes.

अंतरराष्ट्रीय व्यापार कानून पर संयुक्त राष्ट्र आयोग (यूनाइटेड नेशन कमीशन ऑन इंटरनेशनल ट्रेड लॉ: UNCITRAL) के उद्देश्य और प्रमुख उपलब्धियां क्या हैं? साथ ही, इस आयोग के साथ भारत की संबद्धता पर प्रकाश डालते हुए विभिन्न घरेलू विधिक व्यवस्थाओं पर इसके प्रभाव की पहचान कीजिए।

UNCITRAL is the primary organ of the UN in the sphere of International Trade Law. Its objectives include the promotion of free and less regulated trade, enforcement of contracts, a market and business oriented regime and enhanced commerce.

The key achievements of UNCITRAL include :-

→ UN convention on Recognition and Enforcement of Arbitral Awards.

→ Model Law on Arbitration Agreements and their enforcement.

→ Convention on Sale of goods.

→ Effective enforcement and bringing

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together majority States to accede to and follow the above conventions.

India's association with UNCITRAL:-

→ UNCTRICAL conventions and model laws have been largely incorporated into the following Indian laws:-

(i) Arbitration & Conciliation Act, 1996.
(ii) SARFAESI Act, 2002.
(iii) Information Technology Act, 2000.

→ Parts II and III of Arbitration & Conciliation Act, 1996 are based on UNCITRAL's law on international enforcement and conciliation regime.

→ New Model BIT has been drafted relying on UNCITRAL laws.

Therefore India shares a deep and meaningful relationship

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with UNCITRAL, and should further cooperation to promote free and fair trade & commerce.

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12. What are the issues and challenges faced by Indian migrants in the Gulf countries? Enumerate the steps taken by the Indian government to address these.

खाड़ी देशों में भारतीय प्रवासियों द्वारा सामना किए जाने वाले मुद्दे एवं चुनौतियाँ क्या हैं? इनसे निपटने के लिए भारत सरकार द्वारा उठाए गए कदमों को सूचीबद्ध कीजिए।

The Gulf countries like Qatar, Saudi Arabia, Bahrain, Iraq etc have very large communities of Indian expatriates. These include labourers, workforce, rich and middle tier merchants and traders, etc. They contribute heavily to remittances sent back to India, particularly states like Kerala.

Issues and challenges :-

→ Security - in light of recent Qatar crisis, the long standing Shia-Sunni divide, and ISIS threat to the region.

→ Exploitation of workforce through low wages, long working hours, deplorable conditions of work etc.

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→ No / lack of social security for the workers.

→ They are caught in a debt trap, almost to a point of no return.

Steps by Indian government :-

→ Evacuation efforts like operations Rahat and Sankat Mochan.

→ Programs like Pravasi Kaushal Yojana for skill development.

→ Engaging with countries diplomatically to ensure better work conditions.

→ Strengthening consular access and hotlines for redressal.

→ Merger of OCI and PIO cards.

→ Proxy voting in elections to empower them.

Hence, these along with further proposed measures will go a long way in safeguarding our diaspora.

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13. The recent breakthrough in the Civil Nuclear field is a sign of India-Japan relations moving beyond the calculations of complementarities and cooperation. Analyse in view of the multiple factors shaping India-Japan relations.

नागरिक परमाणु क्षेत्र में हाल ही में प्राप्त सफलता भारत-जापान संबंधों का अन्योन्याश्रितताओं (अनुपूरक) और सहयोग से परे जाने का चिह्न है। भारत-जापान संबंधों को आकार प्रदान करने वाले विविध कारकों का विश्लेषण कीजिए।

The civil Nuclear Agreement has transcended the India-Japanese relationship from one of skepticism post the Pokhran test to one of strategic engagement and cooperation. Japan was till now skeptical of India's potential diversion of civil nuclear energy to military uses.

However, post India's opening of reactors to inspection by IAEA, assurance in multilateral platforms, passing of Insurance laws and changing geo-political situation, Japan has begun to support India's nuclear energy program with full force.

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This gains further importance in light of following factors:-

→ common interest to counter Chinese influence.

→ commitment to environment, as nuclear energy is clean energy.

→ It will propel the Indo-US Civil Nuclear Agreement also, as the most integral part in US reactors is made by Japanese companies.

→ Part of larger growth dominance perspective of India and Japan in Asia-Africa region.

→ To boost trade and investment in an otherwise slow economy, globally.

Indo-Japan relations have reached a higher level of engagement in other sectors like freight corridors,

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industrial parks, bullet train etc. This will further strengthen ties and give an impetus to trade and economic development, apart from having geopolitical and strategic connotations.

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14. The Commonwealth grouping has been accused of talking about ideals that it does not uphold and wasting the resources of governments. Critically analyse the statement and comment on the relevance of the Commonwealth grouping in present times.

राष्ट्रमंडल समूह पर उन आदर्शों के संबंध में चर्चा करने जिनका स्वयं इसके द्वारा अनुसमर्थन नहीं किया जाता एवं सरकारों के संसाधनों का अपव्यय करने के आरोप लगते रहे हैं। इस कथन का *आलोचनात्मक* विश्लेषण कीजिए एवं वर्तमान समय में राष्ट्रमंडल समूह की प्रासंगिकता पर टिप्पणी कीजिए।

The common wealth grouping continued post decolonisation to enhance shared "historical values", culture, and to fuel Britain's standing globally in terms of military and civilian alliances. Above all, it promotes the ideals of democracy and liberalism.

HOWEVER, in the present times, the grouping has lost its relevance due to the following reasons:-

→ India and Australia, the two biggest countries in the grouping exited soon after their respective independence.

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→ The "common law" has been replaced by respective domestic legal systems, with reducing importance of the Privy council.

→ Economic and security interests have gained more importance than civil and political engagement.

→ Emergence of USA, Russia and China as superpowers diminished Britain's historical position.

→ Multilateralism and self interest in economy is the order of the day.

THAT SAID, the importance of the grouping is reviving in the world of today, with rising Nationalism, Protectionism and thought of racial superiority. The Alt-Right movement needs to be undone with liberal democratic and globalised

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systems, as espoused by the Commonwealth grouping.

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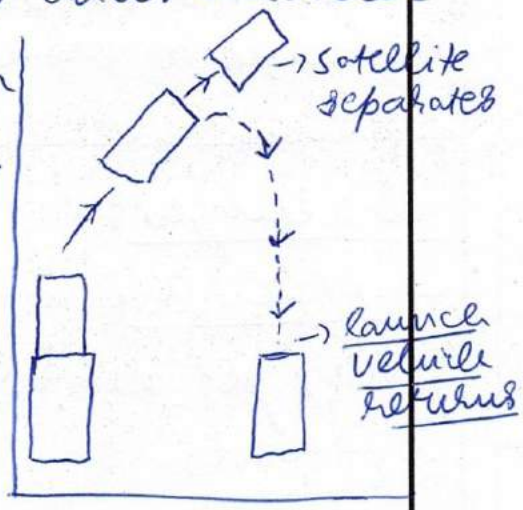
15. ISRO has successfully flight tested the Reusable Launch Vehicle-Technology Demonstrator (RLV-TD). Discuss the significance of RLV and bring out the differences between RLVs and conventional Launch Vehicles (LVs). What are the challenges in successful execution of RLVs?

इसरो (ISRO) ने पुन: प्रयोज्य प्रक्षेपण वाहन-तकनीक प्रदर्शक (रियूजेबल लॉन्च व्हीकल-टेक्नोलॉजी डेमोंस्ट्रेटर: RLV-TD) की उड़ान का सफलतापूर्वक परीक्षण किया। RLV के महत्व पर चर्चा कीजिए तथा RLVs एवं पारंपरिक प्रक्षेपण वाहनों (लॉन्च व्हीकल: LVs) के बीच अंतर स्पष्ट कीजिए। RLVs के सफल कार्य-निष्पादन में क्या चुनौतियां हैं?

The latest successful launch of RLV-TD by ISRO adds another feather to its cap in terms of the future of launch vehicle technology.



Significance:-

→ saves costs of launch vehicles. Time for each launch reduced.

→ gives impetus to commercial launches in future.

→ Presents India as a world leader in space operations.

→ Reduces consumption of fuel by using surrounding oxygen.

→ Reduces contribution to space debris.

→ Sustainability of space launches.

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RLV's	CLV's.
→ cost effective	expensive
→ Saves time	time consuming
→ uses less resources and input/raw materials	uses more resources.
→ Launch vehicle returns to earth	Launch vehicle doesn't return.

Challenges:-

→ Precision in terms of landing may get disturbed due to wind systems.

→ double friction (ascending and landing) may increase wear and tear beyond sustainable levels.

→ Technology has still not been perfected to expand on a repetitive/commercial scale.

→ very expensive at the starting point.

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16. Women constitute just 14% of science researchers in India, though they are no longer a minority within higher education when it comes to STEM. Analyse the reasons for this state of affairs and discuss how it can be addressed.

यद्यपि भारत में विज्ञान शोधकर्ताओं की कुल संख्या में महिलाएं केवल 14% ही हैं, किन्तु STEM के संदर्भ में उच्च शिक्षा के अंतर्गत वे अब अल्पसंख्यक नहीं हैं। इस स्थिति के कारणों का विश्लेषण कीजिए और चर्चा कीजिए कि इसका समाधान किस प्रकार किया जा सकता है?

Women not only contribute very little to the workforce (27%), but are also less represented in STEM sectors. The reasons for this are manifold:-

→ Traditional biases that view man as the bread winner and women as the home maker.

→ Gender bias with respect to capability in science and technology, mathematics fields.

→ Adverse preferences in fund allocation for research.

→ The age of 20-35, when research predominates one's career, women usually take sabbaticals due to

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family planning reasons.

→ Lack of scope for "work from home" in STEM sectors.

Ways to address this:-

→ Encourage women by setting an example in promoting research

→ Provide support functions like creche facilities etc.

→ Education and sensitisation of those incharge of making decisions.

→ Schemes like Kiran and CURIE set an example and provide the way forward.

Women are the biggest untapped resource in STEM sectors and the government must resort to change this by bringing an attitudinal shift in thinking.

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17. What do you understand by Internet Governance? Has the recent development of ICANN becoming free from the US government solved the issues of Internet Governance? What should be the way forward?

इंटरनेट गवर्नेंस से आप क्या समझते हैं? क्या संयुक्त राज्य अमेरिका की सरकार से ICANN के मुक्त होने की हाल ही की घटना ने इंटरनेट गवर्नेंस के मुद्दों का समाधान किया है। आगे की राह क्या होनी चाहिए?

Internet governance is the concept of administering and managing the Internet of Things (IOT) in a free and fair manner, in order to ensure equality of its access and use.

It was governed by ICANN, which had majority control by the US government. However, after the snoopgate scandal, Brazil's Dilma Rousseff spearheaded the campaign to free Internet from US control. Finally, the ICANN is now an independent

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body governing the internet from an arm's length. HOWEVER, the following issues remain:-

→ Data security and vulnerability to hackers, cyber terrorism.

→ Net neutrality and free and equal access to all in an equal manner.

→ Misuse of internet by terrorists and anti social elements.

→ Jurisdictional issues in respect of crime.

→ Hosting of servers and host countries' powers.

The WAY FORWARD is international cooperation and addressing the above issues on a war footing by consensus, in a like

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manner as the Montreal convention or Paris Agreement. If not resolved, these issues can threaten our peace and sovereignty.

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18. Increase in the cases of nosocomial infections has emerged as a major concern in India. What are nosocomial infections? What are its causes and why is it a major concern in India? Identify the measures required to combat these infections.

भारत में नोसोकोमियल संक्रमण (nosocomial infections) के मामलों में बढ़ोत्तरी एक प्रमुख चिन्ता के विषय के रूप में उभरी है। नोसोकोमियल संक्रमण क्या हैं? इसके कारण क्या हैं और यह भारत में एक प्रमुख चिन्ता का विषय क्यों है? इन संक्रमणों की रोकथाम करने हेतु उपायों की पहचान कीजिए।

Nosocomial infections are hospital acquired infections like bacteria, fungi, urinary tract etc.

causes:-

→ Lack of hygiene and sanitation

→ Low monitoring & standards upkeep.

→ No sanitisation of equipments.

→ Sheer number of patients, low staff and low capacity of hospitals.

Measures required:-

→ constant cleaning & sanitisation.

→ Isolation of areas and patients with such infections

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→ Awareness generation among staff and educating them on hygiene aspects.

→ Throw away needles and used disposable instruments.

→ culture of cleanliness on a mass scale like Swachh Bharat Mission.

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19. There is a growing concern that robots, automation and AI will transform the labour markets and lead to massive job loss across the world. Comment. Also mention the steps that can be taken to mitigate the impact of increased automation and AI.

इस विषय में चिंता बढ़ती जा रही है कि रोबोट, ऑटोमेशन (स्वचालन) एवं AI, श्रम बाजार को रूपांतिरत कर देंगे और परिणामस्वरूप विश्व भर में बड़े पैमाने पर रोजगारों की हानि होगी। टिप्पणी कीजिए। बढ़ते ऑटोमेशन (स्वचालन) एवं AI के प्रभाव को कम करने हेतु उठाए जा सकने वाले कदमों का भी उल्लेख कीजिए।

Automation and AI are both a boon and a bane to the economy. While they create efficiencies in production and bring economies of scale, they lead to job losses at a large scale due to their precision and capacity to work more than humans.

Therefore, they risk being counter productive as they may lead to poverty and unemployment, deepening the divide between the haves and the have nots.

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Steps to mitigate the impact of AI/automation:-

→ Large scale skill development to enhance capability enhancement of workforce.

→ Structural shift in employment stratification and moving human focus of jobs on non-labour lines.

→ Slow shift towards quarternary and quinary jobs.

→ Enhance the use of emotional quotient in jobs.

→ Draw the baseline beyond which sectors, humans will necessarily dominate.

→ Limit use of automation/AI depending upon cost feasibility.

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20. The importance of IPRs as a marketable financial asset and economic tool needs to be recognised. Elaborate. In this context, analyse how the National Intellectual Property Rights (IPR) Policy intends to lay the future roadmap for intellectual property in India.

बिक्री-योग्य (विपणनयोग्य) वित्तीय परिसंपत्ति एवं आर्थिक उपकरण के तौर पर IPRs के महत्व को मान्यता प्रदान किए जाने की आवश्कता है। विस्तारपूर्वक बताईए। इस संदर्भ में, विश्लेषण कीजिए कि राष्ट्रीय बौद्धिक सम्पदा अधिकार (IPR) नीति भारत में बौद्धिक सम्पदा का भावी रोडमैप किस प्रकार निर्धारित करना चाहती है?

Intellectual Property Rights like Patents, Trademarks, copyright, GI's provide protection and ownership to the creator of a product, design, literary work etc against its use and misuse by others. They provide recognition to inventions, and exclusivity of use or the right to sell those use rights. These act as an incentive for more innovation, creation and R&D.

The National IPR Policy, 2016 endeavours to make India an IPR friendly regime, by

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providing the following:-

→ Retains section 3(d) provisions on ~~[illegible]~~ evergreening. For a patent, novelty and innovation need to be coupled with appreciable value addition.

→ Retains compulsory licensing under section 84 of Patents Act, 1970 to promote generic medicines in exceptional cases.

→ Ease the process of grant of IPR

→ Public Research institutions will mandatorily file for IPR's

A criticism of the Policy is that it assumes that maximum protection leads to maximum innovation. It goes against the spirit of free flow of information. That said, the Policy is a welcome step & will provide a fillip to the IPR regime in India.